

REMARKS

The Examiner rejected the claims under § 112, first paragraph, by questioning the rocket booster's operability in water. The rocket boosters are operable in any inert environment (i.e., no oxygen) since modern solid rocket boosters (e.g., Tomahawk cruise missile boosters, etc.) utilize a propellant comprising a non-liquid chemical compound (e.g., aluminum-ammonium-perchlorate) that provides self-sustaining combustion once initiated with an igniter primer. In the chemical chain-reaction, the oxidizer is released and consumed as the propellant is burned. The aircraft described in the present application may utilize a solid rocket booster such as the Tomahawk cruise missile booster. Please note that Tomahawk cruise missiles are launched underwater from submarines. Thus, one skilled in the art will recognize that no oxygen is required for operability. Therefore, the rocket boosters may be ignited underwater.

Turning to the merits of case, the present invention comprises a sea-launched and recovered aircraft. The aircraft is rocket-boosted and jet-powered and has features and systems to maintain watertight integrity such that it may be released from a submerged submarine or dropped into a body of water by a ship or an aircraft. The aircraft itself is immersible, buoyant, and remains at or near the water surface before its rockets are ignited. The rockets propel the aircraft out of the sea and accelerate it to flying speed before the jet engine is started and the rockets are jettisoned. The aircraft performs its mission independently or in conjunction with other ones of the aircrafts. The aircraft then returns to an assigned splashdown point at sea via, for example, an engine-off "whip-stall" maneuver. A submarine or ship may retrieve the aircraft and readies it for another mission.

In contrast, the cited primary reference, *Leibolt*, is directed to a waterproof canister for keeping an aircraft dry. It is only the canister, not the aircraft, that is waterproof. Col.6, lines 57 – 59. Moreover, the wings of the aircraft must be retracted while the aircraft is inside the canister. Thus, the wings are never extended while the canister is in the water. Abstract, last sentence. Furthermore, *Leibolt* provides no details regarding payload or use of the aircraft after launch, nor any details regarding retrieval of the aircraft. This latter element is completely

deficient for rejecting Applicant's invention. One may assume that, like the canister, the aircraft is disposable after a single use. It is also clear that *Leibolt's* aircraft cannot be landed in water.

The secondary reference, *Shao-Tang Lee*, suggests inflatable landing gear for a "vertical take-off aircraft." Col.1, lines 16 – 18. However, that reference is only concerned with landing aircraft *on top* of a body of water, not in it. Col.3, lines 47 – 48. It is also clear from that reference that the pontoons cannot be used for conventional horizontal landings. The design and structural limitations of the soft, inflatable pontoons would cause them to be destructively sheared from the belly of an aircraft attempting to make a horizontal glide landing. Thus, *Leibolt* cannot be combined with *Shao-Tang Lee* since *Leibolt* is clearly not a vertical take-off aircraft. They are not compatible. Moreover, even if one was to combine the references, that combination only yields a canister-encased, non-waterproof aircraft with inflatable pontoons for landing on top of water. The third reference, *Wedertz*, merely stands for the proposition that missile wings (not aircraft wings) can fold.

Applicant's claims readily distinguish these references. For example, step (b) of Claim 17 requires, "configuring the aircraft itself in a watertight configuration" (emphasis added). It is the aircraft that is watertight, not a canister encasing the aircraft (like *Leibolt*). This element alone is sufficient to overcome the §103(a) rejection. Moreover, *Leibolt* is silent on Applicant's steps (g) through (i). Claim 17 is in condition for allowance.

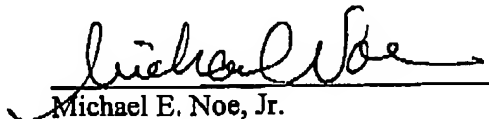
Claims 18 – 29 depend from Claim 17 and are allowable for the same reasons as Claim 17 in addition to their own unique elements. Claim 18 refits the aircraft with another payload and repeats steps (b) through (i). Claim 19 specifically requires "shutting down the jet engine prior to step (h)." Conventional aircraft (like the cited references), do not shut down prior to landing! Claim 20 requires the aircraft to be waterproofed a second time before landing. Claim 21 requires the aircraft to splash down directly into (not on top of) the body of water. Claim 24 requires the wings to be unfolded while the aircraft is at least partially submerged in water. This is impossible with *Leibolt* since its wings must be folded when it is in the canister. Claim 24 also requires the wings to be folded before it is retrieved—not after retrieval.

New Claim 27 specifically requires "equipping the aircraft without landing gear or flotation pontoons," which blows *Shao-Tang Lee* out of the water. Claim 28 forms a long list of watertight requirements for the aircraft itself (not a canister), including, "internally pressurizing the aircraft to offset and balance external hydrostatic water pressure loads, operating inlet and nozzle close-off doors with inflatable watertight seals to make the jet engine watertight, treating manufacturing joints, seams, and airframe penetrations with sealant and appliqué tapes for further enabling the watertight configuration." Like Claims 19 and 20, Claim 29 the jet engine to be shut down and enabling the watertight configuration for the jet engine before being recovered by a submerged submarine.

New independent Claim 30 contains many of the elements cited in the previous dependent claims. Claim 30 and its progeny (Claims 31 - 36) are completely distinguishable over any prior art reference or combination of references.

It is respectfully submitted that the claims are in condition for allowance and favorable action is requested. No fee for an extension of time or other fees are believed to be required. However, in the event that one or more fees are required, please charge them to **Bracewell & Giuliani LL's** Deposit Account Number 50-0259.

Respectfully submitted,


Michael E. Noe, Jr.
Reg. No. 44,975
BRACEWELL & GIULIANI, LLP
P.O. Box 61389
Houston, Texas 77208-1389
(512) 472-7800

ATTORNEY FOR APPLICANTS